

DT19 Rec'd PCT/PTO 24 OCT 2002

#6

SLR:dm 10/24/02 4239-62263 148341.doc

PATENT  
Attorney Reference No. 4239-62263

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Schneider et al.

Application No. 10/070,053

Filed: June 10, 2002

For: HIGH SPEED PARALLEL  
MOLECULAR NUCLEIC ACID  
SEQUENCING

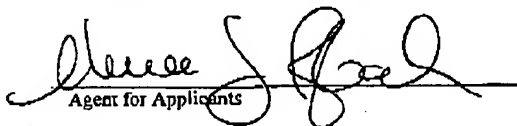
Art Unit: 1645

Examiner: Not yet assigned

Date: October 24, 2002

CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence and any documents referred to as being transmitted herewith are being facsimile transmitted to the Patent and Trademark Office via 703-746-9195 on October 24, 2002.

  
Agent for ApplicantsREQUEST FOR CORRECTED OFFICIAL FILING RECEIPT

Office of Initial Patent Examination  
Customer Service Center  
COMMISSIONER FOR PATENTS  
Washington, DC 20231

Sir:

Applicants received the official Filing Receipt for the application referenced above, a copy of which (with requested correction handwritten thereon) is attached as Exhibit A.

The following error appears on the Filing Receipt:

**ERROR**

This application is a 371 of  
PCT/US00/23736  
08/29/2000

**CORRECT INFORMATION**

This application is a 371 of PCT/US00/23736  
08/29/2000, which claims priority to U.S.  
provisional application no. 60/151,580  
8/30/1999

Also attached is a copy of the cover page of the published PCT application (Exhibit B), showing the priority claim. Also attached is a copy of the two Combined Declarations and Powers of Attorney for Patent Application (Exhibit C) showing the priority claim. Also attached is a copy of the Preliminary Amendment dated February 28, 2002 (Exhibit D) showing the priority claim.

**RECEIVED**

Page 1 of 2

NOV 08 2002

Received from &lt; 503 228 9446 &gt; at 10/24/02 4:58:15 PM [Eastern Daylight Time]

TECH CENTER 1600/2900

SLR:dm 10/24/02 4239-62263 148341.doc

PATENT  
Attorney Reference No. 4239-62263

This request is being submitted within ten days of receipt of the official Filing Receipt by the undersigned attorney.

Applicants request that the identified error be corrected and that a new official Filing Receipt be issued.

Please call the undersigned if any further information is required.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By

  
Sheree Lynn Rybak, Ph.D.  
Registration No. 47,913

One World Trade Center, Suite 1600  
121 S.W. Salmon Street  
Portland, Oregon 97204  
Telephone: (503) 226-7391  
Facsimile: (503) 228-9446

cc: Docketing



NIH/SLR/NMS

Commissioner for Patents  
Washington, DC 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
10/070,053	06/10/2002	1645	1272	4239-82263	2	42	3

CONFIRMATION NO. 9108

24197  
KLARQUIST SPARKMAN, LLP  
121 SW SALMON STREET  
SUITE 1600  
PORTLAND, OR 97204

## FILING RECEIPT

\*OC00000008839243\*

Date Mailed: 10/04/2002

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Filing Receipt Corrections, facsimile number 703-746-9195. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Thomas D. Schneider, Frederick, MD;  
Denise Rubens, Rocky Ridge, MD;

## Domestic Priority data as claimed by applicant

## Foreign Applications

→ This application is a 371 of PCT/US00/23736 08/29/2000, which claims priority to  
U.S. provisional application no. 60/151,580 08/30/1999

Projected Publication Date: None, application is not eligible for pre-grant publication

Non-Publication Request: No

Early Publication Request: No

## Title

✓ High speed parallel molecular nucleic acid sequencing

## Preliminary Class

435

Exhibit A  
Page 1 of 2

**LICENSE FOR FOREIGN FILING UNDER  
Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau

1. PUBLISHED BY THE WORLD INTELLECTUAL PROPERTY ORGANIZATION  
2. PUBLISHED BY THE PATENT COOPERATION TREATY (PCT)  
3. PUBLISHED BY THE EUROPEAN PATENT OFFICE (EPO)  
4. PUBLISHED BY THE JAPANESE PATENT OFFICE (JPO)  
5. PUBLISHED BY THE KOREAN PATENT OFFICE (KPO)  
6. PUBLISHED BY THE NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY (NIPP)

(43) International Publication Date  
8 March 2001 (08.03.2001)

PCT

(10) International Publication Number  
WO 01/16375 A2(51) International Patent Classification: C12Q 1/68.  
G01N 21/64(74) Agent: NOONAN, William, D.; Klarquist, Sparkman,  
Campbell, Leigh & Winston, LLP, Suite 1600, One World  
Trade Center, 121 SW Salmon Street, Portland, OR 97204  
(US).

(21) International Application Number: PCT/US00/23736

(22) International Filing Date: 29 August 2000 (29.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/151,580 30 August 1999 (30.08.1999) US

(71) Applicant (for all designated States except US): THE  
GOVERNMENT OF THE UNITED STATES OF  
AMERICA, as represented by THE SECRETARY  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
[US/US]; The National Institutes of Health, Office  
of Technology Transfer, Suite #325, 6011 Executive  
Boulevard, Rockville, MD 20852 (US).(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,  
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

## Published:

— Without international search report and to be republished  
upon receipt of that report.For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: HIGH SPEED PARALLEL MOLECULAR NUCLEIC ACID SEQUENCING

(57) Abstract: A method and device is disclosed for high speed, automated sequencing of nucleic acid molecules. A nucleic acid molecule to be sequenced is exposed to a polymerase in the presence of nucleotides which are to be incorporated into a complementary nucleic acid strand. The polymerase carries a donor fluorophore, and each type of nucleotide (e.g. A, T/U, C and G) carries a distinguishable acceptor fluorophore characteristic of the particular type of nucleotide. As the polymerase incorporates individual nucleic acid molecules into a complementary strand, a laser continuously irradiates the donor fluorophore, at a wavelength that causes it to emit an emission signal (but the laser wavelength does not stimulate the acceptor fluorophore). In particular embodiments, no laser is needed if the donor fluorophore is a luminescent molecule or is stimulated by onc. The emission signal from the polymerase is capable of stimulating any of the donor fluorophores (but not acceptor fluorophores), so that as a nucleotide is added by the polymerase, the acceptor fluorophore emits a signal associated with the type of nucleotide added to the complementary strand. The series of emission signals from the acceptor fluorophores is detected, and correlated with a sequence of nucleotides that correspond to the sequence of emission signals.

WO 01/16375 A2

Exhibit	B
Page	1 of 1

**COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **HIGH SPEED PARALLEL MOLECULAR NUCLEIC ACID SEQUENCING**, the specification of which

- ☐ is attached hereto.
- ☐ was filed on \_\_\_\_\_ as United States Patent Application No. \_\_\_\_\_.
- ☒ was described and claimed in PCT International Application No. PCT/US00/23736, filed on August 29, 2000, and as amended under PCT Articles 19 on n/a (if applicable).
- ☐ and was amended on \_\_\_\_\_ (if applicable).
- ☐ with amendments through \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56. If this is a continuation-in-part application filed under the conditions specified in 35 U.S.C. § 120 which discloses claims and subject matter in addition to that disclosed in the prior copending application, I further acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the applications(s) on which priority is claimed:

Number

Country

Date Priority Claimed

☐ Yes

☐ No

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

60/151,580

30 August 1999

Application Number

Filing Date

COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 1 of 3

Exhibit

Page

C

1 of 6

SLR:dm 02/22/02 96762.doc

Expt. Mail Label No. EV053212695US  
Attorney Ref. No. 4239-62263

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT international application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

PCT/US00/23736

29 August 2000

Pending

Application Number

Filing Date

Status: patented, pending abandoned

I hereby appoint the practitioners associated with the customer number provided below to prosecute this application, to file a corresponding international application, and to transact all business in the Patent and Trademark Office connected therewith:

Customer Number



Name	Reg. No.	Name	Reg. No.
BUNKER, Gillian	47,461	ORR, David E.	44,988
BURG, Daniel B.	41,649	PETERSEN, David P.	28,106
CALDWELL, Lisa M.	41,653	POLLEY, Richard J.	28,107
CARLSON, Anne	47,472	RINEHART, Kyle B.	47,027
GIRARD, Michael P.	38,467	RUPERT, Wayne W.	34,420
HAENDLER, Jeffrey B.	43,652	RYBAK, Sheree L.	47,913
HARDING, Tanya M.	42,630	SCOTT, Robert F.	39,830
JAKUBEK, Joseph T.	34,190	SIEGEL, Susan Alpert	43,121
JONCUS, Stephen J.	44,809	SLATER, Stacey C.	36,011
JONES, Michael D.	41,879	STEPHENS Jr., Donald L.	34,022
KLARQUIST, Kenneth S.	16,445	STUART, John W.	24,540
KLITZKE II, Ramon A.	30,188	VANDENBERG, John D.	31,312
LEIGH, James S.	20,434	WHINSTON, Arthur L.	19,155
MC LEOD, Richard D.	46,921	WIGHT, Stephen A.	37,759
MAURER, Gregory L.	43,781	WINN, Garth A.	33,220
MIRHO, Charles A.	41,199	ZASTROW, Devon J.	50,206
NOONAN, William D.	30,878		

I hereby grant the law firm of Klarquist Sparkman, LLP, the power to insert on this Combined Declaration and Power of Attorney any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for submitting this document.

Address all telephone calls to Sheree Lynn Rybak, Ph.D. at telephone number (503) 226-7391.

Address all correspondence to the address associated with the customer number provided below:

Customer Number



COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 2 of 3

Exhibit C  
Page 2 of 16

J.R.dm 02/22/02 96762.doc

Express Mail Label No. EV053212695US  
Attorney Ref. No. 4239-62263

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of First or Sole Inventor: Thomas D. Schneider

Residence: Frederick, Maryland

Mailing Address: 107 Alessandra Court, No. 208  
Frederick, MD 21702-4015

Citizenship: United States of America

Inventor's Signature \_\_\_\_\_

Date \_\_\_\_\_

Name of Second Inventor: Denise Rubens

Residence: Rocky Ridge, Maryland

Mailing Address: 13815 Motters Station Road  
Rocky Ridge, MD 21778

Citizenship: United States of America

Inventor's Signature \_\_\_\_\_

Date

March 4, 2002

COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 3 of 3

Exhibit

3 of 10

Received from &lt; 503 228 9446 &gt; at 10/24/02 4:58:15 PM [Eastern Daylight Time]

**COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **HIGH SPEED PARALLEL MOLECULAR NUCLEIC ACID SEQUENCING**, the specification of which

- ☐ is attached hereto.
- ☐ was filed on \_\_\_\_\_ as United States Patent Application No. \_\_\_\_\_.
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Number	Country	Day/Month/Year Filed	<input type="checkbox"/> Yes	<input type="checkbox"/> No
--------	---------	----------------------	------------------------------	-----------------------------

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

<u>60/151,580</u>	<u>30 August 1999</u>
Application Number	Filing Date

COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 1 of 3

Exhibit C  
Page 4 of 12

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Express Mail Label No. EV053212695US  
Attorney Ref. No. 4239-62263

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PCT/US00/23736	29 August 2000	Pending
Application Number	Filing Date	Status: patented, pending abandoned

I hereby appoint the practitioners associated with the customer number provided below to prosecute this application, to file a corresponding international application, and to transact all business in the Patent and Trademark Office connected therewith:

Customer Number



Name	Reg. No.	Name	Reg. No.
BUNKER, Gillian	47,461	ORR, David E.	44,988
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CARLSON, Anne	47,472	RINEHART, Kyle B.	47,027
GIRARD, Michael P.	38,467	RUPERT, Wayne W.	34,420
HAENDLER, Jeffrey B.	43,652	RYBAK, Sheree L.	47,913
HARDING, Tanya M.	42,630	SCOTTI, Robert F.	39,830
JAKUBEK, Joseph T.	34,190	SIEGEL, Susan Alpert	43,121
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MAURER, Gregory L.	43,781	WINN, Garth A.	33,220
MIRHO, Charles A.	41,199	ZASTROW, Devon J.	50,206
NOONAN, William D.	30,878		

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COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 2 of 3

Exhibit

C

Page

5 of 6

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Express Mail Label No. EV053212695US  
Attorney Ref. No. 4239-62263

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of First or Sole Inventor:	Thomas D. Schneider
Residence:	Frederick, Maryland
Mailing Address:	107 Alessandra Court, No. 208 Frederick, MD 21702-4015
Citizenship:	United States of America
Inventor's Signature	<u>Thomas D. Schneider</u> Date <u>2002 Feb 25</u>

Name of Second Inventor:	Denise Rubens
Residence:	Rocky Ridge, Maryland
Mailing Address:	13815 Motters Station Road Rocky Ridge, MD 21778
Citizenship:	United States of America
Inventor's Signature	_____ Date _____

COMBINED DECLARATION AND POWER OF ATTORNEY - PAGE 3 of 3

Exhibit	<u>C</u>
Page	<u>6</u> of <u>6</u>

Received from &lt; 503 228 9446 &gt; at 10/24/02 4:58:15 PM [Eastern Daylight Time]